TYPICAL PROJECT RISKS

Common general project risk situations encountered:

- The project sponsor (and the project manager) do not recognize that every project is an exercise in risk.
- When the project is in its earliest phase, project risk and opportunity are highest (but the amount at stake is lowest).
- The project scope, objectives and deliverable ate not clearly defined or understood.
- Some or all technical data is lacking.
- The technical process (and design) are not mature.
- Standards for performance are unrealistic (the best there is for everything) or are absent.
- Cost, schedules, and performance are not expressed ranges.
- The future timing of activities and events are vague.
- Design lacks production engineering input.
- Prototype of a key element is missing.
- There is a higher than usual R&D component.
- Some or all environmental permits are outstanding.
- Other similar projects have been delayed or canceled.
- Some key subsystems and/or materials are sole source.
- No appropriate contingency plans have been developed.
- The project team relies entirely on the contingency allowance.

External Unpredictable (and uncontrollable)

a. Regulatory, i.e., unanticipated government intervention in:
   - supply of raw materials
   - environmental issues
   - design standards
   - production standards
   - site location
   - product or service sales or export
   - pricing
   - special requirements

b. Natural Hazards, i.e., as a result of natural elements:
   - location
   - storm
   - flood
   - earthquake

c. Postulated Events, i.e., as a result of deliberate intent:
   - vandalism
   - sabotage

d. Indirect Effects, i.e., occurring as a result of the project:
   - environmental
   - social

e. Completion, i.e., failure to complete the project on account of one of the following:
   - failure of the supporting infrastructure as a result of others
   - failure of design, execution or supply contracts due to bankruptcy or receivership, etc.
   - failure to provide financial support to the end of the project
   - inappropriate project concept or configuration
   - political unrest

- lack of final acceptance

Source: *Project and Program Risk Management*, Project Management Institute, 1992.

External Predictable (but uncontrollable)

Changes in the following are predictable, but the extent and direction is uncertain.

a. Market Risks
   - availability of raw materials
   - cost of raw materials
   - demand, including consumer/user rejection
   - economics
   - competition
   - end value in the market
   - willingness of buyers to honor purchases agreements
b. Operational, i.e., after project completion
   - maintenance needs
   - fitness for purpose
   - safety
c. Environmental Impacts
d. Social Impacts
e. Current Changes
f. Inflation
g. Taxation

Internal, Non-Technical (but generally controllable)

a. Management, i.e., difficulties due to:
   - insincerity/lack of integrity
   - incapacity
   - inadequacies
   - loss of control
   - incompatibility of goals
   - senior staff changes
   - inappropriate or lack of organizational structure
   - lack of appropriate policies and procedures
   - inadequate planning
   - unrealistic goals
   - lack of coordination
   - inadequate project management
b. Schedule, i.e., delays and time overrun due to:
   - delays due to management difficulties above
   - regulatory approvals
   - labor shortages
   - labor productivity
   - labor stoppages
   - material shortages
   - late deliveries
   - unforeseen site conditions
   - sponsor/user scope changes
   - accident or sabotage
   - start-up, turn-over or launch difficulties
   - lack of access

Source: *Project and Program Risk Management*, Project Management Institute, 1992.

c. Cost, i.e., overruns due to:
   - any of the schedule delays listed above
   - inappropriate procurement strategy
   - pay negotiations
   - management and/or workforce inexperience
   - lack of understanding how parts fit together
   - contractor claims
   - under-estimating
   - any of the external factors listed previously
d. Cash Flow
   - squeezing
   - interruption
   - insolvency
e. Loss of Potential, i.e., removal of:
   - benefit
   - profit

Technical (and generally controllable)

a. Changes in Technology
   - rendering parts of the project obsolete
   - parts discontinued
   - introduction by competitors, rendering the project obsolete, uncompetitive, or unacceptable
   - complexity introduced as a result of new technology
b. Performance
   - quality
   - rate of production
   - reliability
c. Risks Specific to Project's Technology
   - inadequate data
   - designer/detailer inexperience
   - design inadequacies
   - detail, precision, and suitability of the specification
   - likelihood of changes during the course of the project
   - design vs. execution methods
d. Sheer size or complexity of project

Legal (generally controllable)

Difficulties arising from any of the following:

a. Licenses
b. Patent Rights
c. Contractual, i.e., difficulties due to:
   - misinterpretation
   - misunderstanding
   - inappropriate contracting strategy/contract type
   - failure

d. Outsider Suit
e. Insider Suit
f. Force Majeure

Source: *Project and Program Risk Management*, Project Management Institute, 1992.